

CLAIMS

1. A crosslinkable high pressure polyethylene composition containing ethylene silane copolymer resin having
5 a content of silane of about 0.1 to 10 weight% and at least one silanol condensation catalyst, characterized in that the density of the composition is $>928 \text{ kg/m}^3$.
2. A crosslinkable high pressure polyethylene composition according to claim 1, wherein the density of the
10 composition is $>933 \text{ kg/m}^3$.
3. A crosslinkable high pressure polyethylene composition according to claim 2, wherein the ethylene silane copolymer resin is an ethylene-vinyltriethoxysilane copolymer, an ethylene-gamma-methacryloxytriethoxysilane
15 copolymer, an ethylene- vinyltrimethoxysilane copolymer or an ethylene-gamma-trimethoxysilane copolymer resin, preferably an ethylene- vinyltrimethoxysilane copolymer resin.
- 20 4. A crosslinkable high pressure polyethylene composition according to claim 3, wherein the ethylene- vinyltrimethoxysilane copolymer resin further comprises high density polyethylene in an amount of $<40 \text{ weight\%}$.
5. A crosslinkable high pressure polyethylene composition according to claim 4, wherein the amount of high
25 density polyethylene is 15-35 weight%, preferably 20-30 weight%.
6. A crosslinkable high pressure polyethylene composition according to any of claims 1-5, wherein the MFR₂ at
30 $190^\circ\text{C}/2.16 \text{ kg}$ is 0.1-100 g/10 min, more preferably 0.5-6 g/10 min and most preferably 1-4 g/10 min.
7. A crosslinkable high pressure polyethylene composition according to any of claims 1-6, wherein the elongation at break is $>200\%$ as measured according to ISO
35 527.
8. A crosslinkable high pressure polyethylene composition according to any of claims 1-7, wherein the ten-

sile strength at break is >12.5 MPa as measured according to ISO 527.

9. A crosslinkable high pressure polyethylene composition according to any of claims 1-8, wherein the gel
5 content is >65 weight% as measured according to ASTM D 2765.

10. A crosslinkable high pressure polyethylene composition according to any of claims 1-9, wherein the polyethylene composition further comprises 0.1-2.0
10 weight% of a drying agent.

11. A process for the preparation a crosslinkable polymer composition according to any of claims 1-10
c h a r a c t e r i s e d in that the process is a high pressure process at a pressure above 1200 bar.

15 12. A process according to claim 11, wherein the polymer composition is crosslinked in the presence of a silanol condensation catalyst comprising a compound of formula (I):

20 ArSO_3H (I)

or a precursor thereof, Ar being a hydrocarbyl substituted aromatic group comprising at least 14 carbon atoms.

25 13. A process according to claim 11, wherein the polymer composition is crosslinked in the presence of a silanol condensation catalyst, preferably dibutyl-tin-dilaurate.

30 14. A pipe made of a crosslinkable polymer composition according to any of claims 1-10.

15. A pipe according to claim 14, wherein the pressure resistance at 95°C is at least 2.8 MPa, more preferably 3.6 MPa and most preferably 4.4 MPa for a failure time of at least more than 1000 hours.

35 16. Use of a crosslinkable polymer composition according any of claims 1-10 as an insulation for a cable.